NAVY CIVIL ENGINEER

VOL. XXI NO. 1

Introducing the 42 new officers of the Civil Engineer Corps, U.S. Navy

Rear Admiral John Paul Jones, CEC, USN, commanding officer of the Western Division, Naval Facilities Engineering Command, San Bruno, Calif., welcomed 42 newly commissioned Civil Engineer Corps officers into the corps during graduation ceremonies 12 December 1980, held at the Naval School, Civil Engineer Corps Officers, Port Hueneme, Calif.

The class, Number 157, had just completed eight weeks of specialized training pertinent to the Navy's needs for shore installation engineering, public works management, and Seabee operations. Following his address RADM Jones presented diplomas assisted by Captain Fred G. Kelley, CEC, USN, commanding officer of the school.

Honor graduate was LTJG Craig H. Chapman, CEC, USN (indicated by ★). Class members graduating "with distinction" were: Ens James T. Couch, Ens James H. Hamrick, LTJG Gary A. Pfannenstiel, Ens James M. Underwood, and LTJG A. P. Verhofstadt (indicated by •).

ENS DAVID M. BALK
BS Arch./Calif. Poly
to San Diego

ENS SAMUEL K. BARKLEY III
BSCE/U. of Delaware
to San Juan, P.R.

LTJG ALLAN J. BELLACICCO
BSCE The Citadel
to Sigonella, Italy

ENS STEVEN A. BESSETTE
BSCE/Okla. State
to Norfolk, Va.

ENS MICHAEL R. BROWN
BS Ind. Eng./U. of Ark.
to Gulfport, Miss.

★ LTJG CRAIG H. CHAPMAN
BSEE/N.C. State
to Jacksonville, Fla.

LTJG CHARLES W. CLARK
BSME, MSE/U. of Louisville
to Subic Bay, R.P.

ENS BRYCE C. COLEMAN
BSCE/UC Davis
to Keflavik, Iceland

Basic CEC Officers Class No. 157

Graduated 12 December 1980

• ENS JAMES T. COUCH
BSCE/The Citadel
to Gulfport, Miss.

ENS LARRY E. DENNISON
BSCE/The Citadel
to Gulfport, Miss.

ENS PHILIP S. FEILER
BSCE/San Jose State
to Port Hueneme, Calif.

ENS JOHN M. GENT
BSCE/Oregon State
to Pearl Harbor

ENS THOMAS C. GUERCI
BSCE/Union College
to Bethesda, Md.

• ENS JAMES H. HAMRICK
BSCE/Miss. State
to Norfolk, Va.

LT MARK L. KIMBALL
BS/Marquette U.
to Jacksonville, Fla.

ENS DIANE C. KULLMANN
BSCE/Lafayette U.
to Naples, Italy

ENS STEPHEN J. LORD
BSCE/Cal Poly
to Port Hueneme, Calif.

ENS RAYMOND L. MARTIN
BSCE/U. of R.I.
to Gulfport, Miss.

ENS GLENN W. McCALL
BEE/Georgia Tech.
to Bethesda, Md.

ENS MARTIN J. McKENNA
BS/Cal Poly Pomona
to San Francisco

ENS WILLIAM C. McKERALL
BSCE, MSCE/Texas A&M
to Williamsburg, Va.

Continued Inside Back Cover

Qualified engineering students may earn over $830 a month prior to graduation

☐ Students must be a U.S. citizen, between the ages of 19 and 27½ years, and within 12 months of graduation and enrolled at an institution accredited by the Accreditation Board for Engineering / Technology. . .

☐ and meeting current scholastic and physical standards upon acceptance into the program, they will be placed on active duty as Officer Candidate, Seaman (E-3), prior to receiving their baccalaureate degrees . . .

☐ upon graduation they will be required to complete Officer Indoctrination School, Newport, R.I., and the basic course of instruction at the Naval School, Civil Engineer Corps Officers, at Port Hueneme, Calif. . . .

☐ following completion of Officer Indoctrination school, and commissioning as Ensigns, Civil Engineers Corps, U.S. Navy, they will be obligated to remain on active duty for four years.

☐ Applicants are not limited to civil engineering but are eligible if completing degrees in *mechanical, electrical, ocean, petroleum, construction, or agricultural engineering.* Applicants enrolled in architecture must be pursuing study programs of at least five years duration in an institution by the National Architectural Accrediting Board.

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WILLIAM M. ZOBEL
Rear Admiral, CEC, USN
Commander
and
Chief of Civil Engineers

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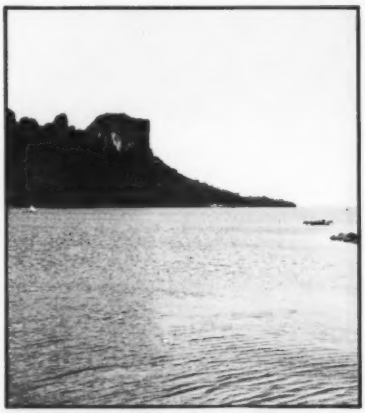
NEW COMMANDER, and Chief of Civil Engineers is Rear Admiral William M. Zobel. His biography is presented on page 30.



PACIFIC ISLANDS, a lure to many, is experienced by three CEC couples during their assignments. The 'letters to home' begin on page 21.

PART OF THE ACTION at the Construction Battalion Center, Gulfport, Miss. is Seabee training. The Gulf Coast center is featured on page 4.

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CBC GULFPORT
HOME OF THE ATLANTIC FLEET SEABEES

BY JACQUELYNNE M. DEVINE
Public Affairs Officer, CBC Gulfport

• Gulfport, Miss.

Although most Civil Engineer Corps officers and Seabees are well acquainted with Naval Construction Battalion Center (CBC) Port Hueneme, Calif., some are not as familiar with the home of the Atlantic Fleet Seabees, Gulfport, Miss. CBC Gulfport *is* different from its West Coast counterpart.

The mission of CBC Gulfport is essentially four-fold. It is the home of the Atlantic Fleet Seabees, with consequent housekeeping requirements. Gulfport is also the annual training site for most of the nation's Seabee Reservists. With its vast training capability, it yearly trains 6,000 reserves side by side with their active duty counterparts.

Another function is the day-to-day support in terms of material and equipment for the Seabee battalions deployed in the Atlantic and Caribbean areas. CBC Gulfport also fills a vital contingency mission, acting as a major outfitting and mobilization site with pre-positioned war reserve stocks.

The location of Gulfport is believed ideal in meeting the four-fold mission. The Gulf Coast climate means very few lost training days for the Seabees undergoing military and technical instruction. Perhaps even a greater asset is the availability of nearby facilities.

CBC Gulfport enjoys a very convenient seaport, major rail and road arteries and one of the better commercial air facilities in the southeast, all in close proximity. Access to these major transportation systems is available with little or no military investment and provides an alertness to meet mobilization requirements sending men, material or equipment practically anywhere.

Since 1942 the Navy has maintained a military installation in Gulfport. During World War II it was an Advanced Base Depot and Naval Training Center. In this capacity it provided advanced training to many of the original Seabees of the then Naval Construction Battalions (NCBs) deploying them overseas and supplying their material. It also trained thousands of cooks, bakers, diesel mechanics and armed guards

for service in the European, Asiatic and Pacific theaters. As the war ended it became an inactive naval storehouse.

The installation was officially designated a Naval Construction Battalion Center in 1952 but continued in an inactive status — its population often dipping below 100 officers, men and civilians. In 1966 with the nation's involvement in Vietnam, the Center again became active, peaking out as homeport for seven Seabee battalions in 1968. In 1974, with the conclusion of Davisville, R.I. as the other East Coast homeport for Seabees, Gulfport became the sole home of the Atlantic Fleet Seabees. Today there are four battalions, one-half of the naval construction force, homeported in Gulfport.

CBC Gulfport, thus has a primary concern in its life and that is to support Seabees; with center personnel attuned to that goal. To accomplish Seabee support, the Center has a staff of 600 officers, men and civilians. The Twentieth Naval Construction Regiment (20TH NCR) and the Naval Construction Training Center (NCTC), independent commands, located on the Center are particularly allied with the CBC in Seabee support. These units provide the technical and professional military skills to the battalions during homeport.

With its vast mobilization and shipping inventory, CBC has ample storage space. Storage on the Center includes better than 30 acres of covered warehouse space and an additional 100 acres of open storage. The inventory includes pre-positioned war reserve materials stock (PWRMS), most of it being civil engineer support equipment. It also stores for the Atlantic Fleet two complete outfits, including all the essentials (from tents to bulldozers), to immediately outfit two additional Seabee battalions.

SEABEES DRILL to hone their military skills during field exercises held in the DeSoto National Forest north of Gulfport. This area has proved to be an excellent training ground for Seabee battalions prior to their worldwide assignments.

Other inventory items include supplies needed on a daily basis for the Center, its tenants and the battalions both in residence and deployed elsewhere. Acquisition cost for the material presently stored at Gulfport is estimated at nearly $200 million.

Closely linked to the supply function is the Center's Construction Equipment Department (CED). CED has the responsibility for maintenance, major repair, preservation and de-preservation of equipment as it moves into or out of storage or to the NCF.

The CED complex covers 11 acres and has a newly completed $4.2 million facility which includes 21 overhead cranes. This department can turn a battered piece of equipment into showroom-ready condition. It is one of the most modern facilities of its kind located east of the Mississippi.

To support the mobilization requirements of the NCF, the Center works hand in hand with battalions during "mount out" exercises and responds to requests for special assistance such as to Dominica and Jamaica in 1979 (see *The Navy Civil Engineer* Winter/Spring 1980) and the Texas coast this year after hurricanes devastated those areas.

An important element of the Center's mission, certainly to the individual Seabee, is to provide a permanent home for Seabees and their families. This includes housing, recreational facilities, religious programs and varied other services.

CBC Gulfport has barracks for 3,000 single persons and 107 family units. About one-half the barracks are of the modern, dorm-type and there is a continuing program to improve and replace older barracks.

Tenants at the Center provide exchange, commissary, medical and dental services. Though these serv-

PROFESSIONAL TRAINING is provided the Seabees in a variety of construction trades at the Naval Construction Training Center a tenant command of CBC.

ices are generally limited at CBC, Keesler Air Force Base is just 11 miles away and offers exceptional facilities including a huge, modern hospital.

Within the past year a Family Services Center opened, one of the first in the Navy, and it provides a one stop center for family assistance. Those problems which cannot be resolved by the staff are referred to the person or organization who may provide the needed assistance.

Gulfport is within easy driving distance to metropolitan areas of New Orleans and Mobile, Ala. Gulfport itself is relatively small with an estimated population of 55,000. CBC, in turn, is not a large naval installation; there are fewer people than on an aircraft carrier; so social and economic effect on the local area is significant.

The Center, with its tenant commands, is the largest employer in Gulfport and has a population of some 4,200 military and civilian employees and an annual payroll of nearly $40 million. But money is not the only contribution made by the Center to the local area. It is doubtful if there is any community in the country where the military and civilian publics enjoy such a mutual appreciation. The Gulf Coast populace has long expressed its pride in the Seabees.

A long-standing community assistance program is coordinated by the Center's public works planning office that benefits both Seabees and nearby communities. Requests are routed to battalions through the regiment for accomplishment during their homeport periods.

IN THE WAKE of Hurricanes Camille and Frederic, Gulfport Seabees played an active and important role in clean-up and recovery efforts along the Mississippi Gulf Coast.

Community projects provide on-the-job experience for Seabees and special consideration is given to those requests which provide training needed for forthcoming deployment projects. Many Seabees who have built piers and buildings on Diego Garcia received some of their training while working on community projects in Mississippi.

Seabee assistance has provided fishing piers, boat docks, soccer fields and ball diamonds for residents of the Gulf Coast which certainly includes the builder Seabees and their families. Most recently, they completed a wheelchair ramp at a local hospital and a fountain for the public library.

The community assistance program, along with disaster recovery efforts by Seabees in the wake of such disasters as Hurricanes *Camille* and *Frederic,* have earned the Seabees a reputation for being exceptionally good neighbors.

Although the Center's population is primarily units in support of or actually part of the NCF, CBC is also host to diverse commands as a Navigational Aids Support Unit, Navy Oceanographic Research and Development Activity and a Navy Publication and Printing Office. The former units are functions of the Navy Oceanographic Command located 30 miles to the west at Bay St. Louis, Miss., and the latter provides publications for ships under construction at Ingalls Shipbuilding located 40 miles to the east in Pascagoula, Miss.

CBC also supports a Navy and Marine Corps Reserve Center, a Marine Corps Training Center inspector/instructor staff, and the Coast Guard Reserve. In addition to the reserve Seabee battalions, 4,000 other military people, active and reserve, use CBC facilities for training each year. The Naval Home is located in Gulfport proper and also receives support from the Center.

While the Navy finds the facilities and weather along the Gulf Coast ideal for a military installation, most individuals, too, find the area to their liking.

Gulfport has the advantage of being a small, close-knit community with beaches, fresh and salt water fishing, resort activities and college campuses. Yet its central location to larger metropolitan areas provides big city diversions. So, there must be something for everyone under the Gulfport, Mississippi sun. □

HONORS WERE BESTOWED recently upon the personnel of CBC, Gulfport by the civilian community for "distinguished community service." Accepting the Laurel Wreath award for the Center are Capt Robert P. Phenix, commanding officer, and Command Master Chief CUCM Richard J. Wade. Presenting the award is Rob Barber, President of Coast Federal Savings, sponsors of the annual award.

DEIS - 2

the workings of the Defense Energy Information System

By FRANCES A. FEINER

• Alexandria, Va.

Conservation of energy to control operations cost at Navy shore activities has been emphasized since the early 60's. The 1973 oil crisis provided an impetus for the Navy to reconcentrate on conservation. The constantly increasing cost of energy has served to further increase Navy energy consciousness and spur Navy activities to greater conservation efforts.

The Navy program included elements to retrofit existing facilities to increase their energy use more efficiently, to maintain boiler plants, air conditioning plants and other utility systems at maximum efficiency levels. Capital improvements that would result in long term power reduction have been undertaken and management actions to decrease energy consumption at shore facilities have been improved. All of these efforts proved fruitful to a degree, but a measurement tool was essential to determine the energy conservation achievement.

The Department of Defense (DOD) instituted a monthly reporting system, the Defense Energy Information System (DEIS) to measure fuel inventories and consumption throughout the Navy and its sister services. The DEIS system consisted of two reports, a DEIS-I, Bulk Petroleum Product Report, and a DEIS-II, Utility Energy Report. DEIS-II when first instituted, measured current energy consumption against the consumption of FY73 at the energy user level.

The Navy's DEIS-II also reported current energy cost. This meant the responsibility for energy use and conservation rested with the activity using the utilities, not with the utility supplying activity. Further, all quantities reported in DEIS-II were not quantities of utilities consumed but the quantities of energy needed to produce the utilities consumed. Thus, all reported quantities were required to relate back to utility and fuel bills.

The first major change to DEIS-II took place in 1977. An executive order established for all federally owned buildings an energy reduction goal of 20%, to be accomplished by 1985. DOD responded to the executive order by modifying DEIS-II to measure current energy use against energy consumption of FY75. This FY75 energy "baseline" was established from actual FY75 DEIS-II reports.

Since the DOD DEIS-II system measures only energy consumption while the executive order mandated a reduction per gross square foot of floor area, a method of integrating user activities' energy consumption with gross square footage was needed. The Naval Energy and Environmental Support Activity (NAVFACENGCOM), has developed the Energy Audit Report (EAR) in response to this need.

The EAR matches a Navy activity's energy consumption for the current period and FY75 with the gross square footage of building area it occupied during those periods by drawing energy consumption information from DEIS-II and square footage information from property records in the Navy Facility Assets Data Base (NFADB).

The information from the NFADB must be adjusted to ensure a building's occupant, not necessarily the owner, is credited with the square footage in order to make a valid energy use per square foot calculation. Adjustments must also be made for square footage not in the NFADB but used by an activity reporting energy consumption in DEIS—II.

The first edition of the EAR (FY79 Annual Summary) was distributed in February 1980. It consisted of two parts, the activity report and the major claimant summary. These two versions of the EAR allowed activities, major claimants, and the Chief of Naval Operations to measure progress in energy conservation and take any needed management action. Distribution of quarterly editions of the EAR began in FY80.

The FY80 Annual Summary EAR introduced a new format designed to provide detailed information to public works personnel and summarized information to commanders and commanding officers. The quarterly activity report and the major claimant summary each now consist of three sub reports: An executive sum-

(Continued next page)

FACSO RPT/SYM NO 9593/F75EAR07
NAVYWIDE SUMMARY

DATE.....10 FEB 81

ENERGY AUDIT REPORT
12 MONTH SUMMARY
PREPARED BY...NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY

ACTIVITY & HOUSING

DATE	PRODUCT TYPE	<----FY75 BASELINE----> MWH	MBTU	<-------CURRENT-------> MWH	MBTU	% CHG	% BY FUEL	<---------COST TOTALS--------> COST DOLLARS	UNIT COST
TWELVE MONTH SUMMARY----------									
	ELECTRICITY	6,332,890	73,461,514	6,784,523	78,700,423	7.13%	55.82%	$314,077,330	$46.29
	FUEL OILS		48,798,245		34,654,533	-28.98%	24.58%	$201,281,177	$5.81
	NATURAL GAS		25,711,700		24,081,792	-6.34%	17.08%	$79,346,925	$3.29
	PROPANE GAS		359,683		241,989	-32.72%	0.17%	$2,185,758	$9.03
	COAL		1,907,891		2,114,117	10.81%	1.50%	$3,509,382	$1.66
	STEAM/HTWTR		919,469		1,200,186	30.53%	0.85%	$7,163,699	$5.97
-->	12 MO TOTAL	6,332,890	151,158,502	6,784,523	140,993,040	-6.73%	100.00%	$607,564,251	

	FY75	FY81	% CHANGE
THOUSAND SQUARE FEET			
CLASS 2 (NFADB)...		497,073	
OTHER.....		19,439	
TOTAL.....	505,383	516,512	2.20%
MBTU/THOUSAND SQUARE FEET.....	299.10	272.97	-8.74%

DEIS ... mary, a 12-month summary and a detail report.

The detail and 12-month summaries are primarily for use by public works personnel. The detail report consists solely of the DEIS-II reports received from activities. The 12-month summary provides quarterly summaries of the utilities energy used during the previous 12-month period. The annualization of the information adjusts for the seasonal variation in the fiscal year quarterly information. The executive summary is a one-page report designed to inform commanders of their activity's conservation achievement for the current fiscal year.

The EAR provides management with information on which to base decisions affecting the Navy's attainment of the mandated energy conservation goal. Its usefulness, however, is completely dependent upon accurate, timely reporting of energy use in DEIS-II and square footage in the NFADB.

Since activities are held responsible for energy use reported in the EAR, it behooves them to ensure accurate reporting. More attention will be focused on progress in energy conservation and more use will be made of the EAR as we approach the FY85 target date.

The EAR is not a report referred to only occasionally; it is an information source used daily to monitor and manage energy use at all levels of the Navy. □

Hawaiian housing to air condition, *naturally*

• Pearl Harbor

Architects here at the Pacific Division, Naval Facilities Engineering Command (PacDiv), are experimenting with a new design concept, one that may save hundreds of thousands of dollars each year in construction, electricity and fuel costs.

The concept is a simple one: use Hawaii's natural trade winds, and not air conditioning, to cool military housing projects.

Art Weber, head of PacDiv's architectural branch, admits that the idea of using the "trades" to cool buildings will not work for every building at every site.

"It all depends on whether or not an area is exposed to the trades," he said. "But if it will work, why not take advantage of it?"

The Department of Defense (DoD) established a policy in 1972 that mandated military and family housing in Hawaii and areas with similar climatic conditions be built with air conditioning.

"But the people who drew up the policy forgot that we have trade winds here," said Warren Johnson, head of the PacDiv design division.

A new unaccompanied enlisted personnel housing (UEPH) building was specifically designed to take advantage of the wind. And while the study added approximately $20,000 to the cost of the project design, Weber says it was money well spent, because it will save nearly $1 million in construction costs.

The UEPH project is a 16-story highrise. Present plans call for a 192-unit building which will accommodate one to three enlisted persons per unit.

"The unusual staggered design was dictated by the lot size," said Weber.

Omitting air conditioning should save more than $911,000 in construction costs for 1982. Estimated savings also include nearly $50,000 a year in electricity costs.

In addition to the UEPH project, a four-story, 96-unit complex at the Pearl Harbor Submarine Base is being designed to take advantage of the "trades." By eliminating air conditioning, construction savings should amount to more than $177,000, and electricity savings for the first year should amount to nearly $24,000.

Both projects involved lengthy studies of the site to learn about wind conditions, and wind-tunnel tests of the proposed buildings.

Weber stressed that the importance of not air conditioning the buildings is geared more towards saving barrels of oil rather than actual dollar savings.

"We've come to realize just how precious oil is," he said, "and the days when oil was cheap and plentiful . . . well, those days are gone forever."

The wind-study tests indicated that the proposed buildings will have optimum wind conditions 70 percent of the time. Even during 30 percent of the time when wind conditions are not optimum, Weber said the majority of the units should remain fairly comfortable.

"Because of the present DoD criteria," Weber said, "any time we want to do a non-air conditioned project, we have to go in for a waiver."

He said he hopes the success of the wind-cooling projects will cause the criteria to change, "so that we have to get a waiver to add air conditioning." □

Smoke detector effectiveness

By RICHARD A. RICE
P.E., Penn.
• Alexandria, Va.

Approximately 12,000 persons lose their lives through fire causes each year in the United States — which is more than any other technically advanced country.

In 1979, and incidentally for the first time in five years, there were no deaths in Navy or Marine Corps family housing attributable to fire. This was in part due to an intensive program of installing smoke detectors in family housing units by the services.

Specifically, of the 313 fires reported in Navy and Marine Corps family housing units, 143 had smoke detectors installed. Of this total, on 51 occasions the operation of the smoke detector provided the occupants with the first indication of fire and 17 of these were attributed to the direct prevention of loss of life, injury, or at least reduction of the seriousness of the injury.

It should be pointed out, however, that of the 143 detectors installed, in 100 cases (70 percent) the detectors operated, in 35 cases the fires were too small to actuate the detector, and in 8 cases the operation of the detector was classified as unsatisfactory.

Although the eight cases of unsatisfactory operation of the detector represents only 2½ percent of the cases involved, they may provide an insight to future problems which should be carefully examined.

In three cases, the detectors were reported as faulty; and in two other cases, the batteries were removed. In one instance, the detector was not properly installed and was located in a dead air space where the products of combustion could not enter and activate the detector. A dead air space is located where the wall meets the ceiling and extends 4 inches in either direction along the ceiling and along the wall. Four inches can be vital!

In one unusual case, a hard wired electric detector was installed at the ceiling, but the conduit and wire had to penetrate the roof of the structure in order to supply current to the detector. For some reason, tar from the roof infiltrated the detector and made it inoperable. In the last case, the detector had been removed from the first floor area (where the fire originated) and the detector located on the second floor failed to operate.

As detectors become older, their reliability will decrease if there has not been an established program to properly maintain them and accordingly may provide a false sense of security to occupants. Imagine the implications that may arise if a member of a Navy family is lost in a dwelling fire where a smoke detector was installed but failed to operate!

To insure proper operation of detectors check the following recommendations:

- Detectors should be activated on a monthly basis by the actual use of smoke. Usually, pushing the test button only checks the electrical circuit for the alarm device, it *does not* check the ability of the smoke chamber to react to products of combustion.
- Check the batteries on a regular basis. Higher grade batteries will usually last a year. A built-in warning device will be activated when the battery approaches a low level without enough energy to satisfactorily perform. In many cases the batteries have been removed for other uses; such as replacements in portable radios or electric toys. In other situations, the detector may be activated when a steak is broiled, a pizza is baked, or a dirty oven is used. In such cases the batteries are often removed to deactivate the detector instead of clearing the smoke by other means (i.e., window draft, ventilator exhaust, etc.).
- Occupants who find that the detector is too sensitive to normal cooking should have the detector relocated or a different type of detector installed. It should be noted that photoelectric detectors are less sensitive to cooking situations than are the ionization type of detectors.
- Detectors should be cleaned at least annually thoroughly following the manufacturer's recommendations. The dirtier the detector the less sensitive it is to a fire and by-products of combustion.
- The location of detectors should only be determined by qualified competent personnel. Detectors that are not properly located normally will not function in a fire emergency. However, there are cases on record at the National Fire Protection Association (NFPA), where detectors were activated in sufficient time to evacuate families and they were still not removed from their original packing!
- Each housing administrator should fully inform family housing occupants about the operation and maintenance of the detectors. This should include low battery warnings, how to visually detect a missing battery, what to do about nuisance alarms, how to clear the detector if accidentally activated, how to test the detector, how to maintain the detector, and names and telephone numbers to call if problems with the detectors should occur.

Further experiences with detectors should result in a continuing reduction in dollar losses from fire cause but more importantly the injuries or deaths that can be prevented. □

Oil Skimmer Renovation

By LCDR WILLIAM G. GLYNN, CEC, USN
Construction Equipment Officer,
and ROBERT CASTELLUCCI
Ships Waste and Oil Branch, NAVFACENGCOM

• Port Hueneme, Calif.

The ambitious plan to provide rapid response for cleanup of oil spills inadvertently caused by naval vessels has resulted in a major oil skimmer refurbishment program at the Construction Equipment Department, Port Hueneme, Calif. The program designed by NAVFAC's ships waste and oil branch will hopefully accomplish continued use of the present oil skimmer equipment (DIP 3001) through the 1980s by providing depot level maintenance which should significantly reduce future expenditures on oil spill cleanup equipment.

The Naval Facilities Engineering Command has overall responsibilities, for the procurement of inland water and harbor oil spill cleanup equipment.

The command is now completing a skimmer procurement program that will outfit the Navy with 44 dynamic inclined plane (DIP) oil skimmers. The procurement program actually began in 1974 with the acquisition of six DIP 3001 skimmers equipped with Ford diesel engines. Since that time, these six units have successfully recovered oil spills during 18,000 hours of operation.

Continued operation of the six skimmers without a major overhaul would have resulted in high daily maintenance costs and periods of potential in operation. The need for a cost effective refurbishment program was evident.

OIL SKIMMERS (DIP 3001) are scheduled for overhaul to make the Navy more responsive to cleanup of oil spills inadvertently caused by naval ships. The construction equipment department (CED) at the Construction Battalion Center, Port Hueneme, Calif., is designated as the site for the Navy's oil skimmer renovation.

For expediency, NAVFAC awarded a contract to the Naval Surface Weapons Center, Dahlgren, Va. to study the skimmer refurbishment capabilities of various Navy activities, including public works centers, shipyards, repair activities and construction battalion centers.

Based in part on past experience, technical expertise, competitive labor rates, and a high spirit of accomplishment, the construction equipment department (CED) at the Construction Battalion Center in Port Hueneme, Calif., was selected as the site for the oil skimmer refurbishment program.

Initially, CED was scheduled to provide overhauls for five skimmers, with the first skimmer scheduled for overhaul by the manufacturer, JBF Scientific Corp., Boston.

CED personnel were trained by JBF in the necessary steps leading to a completely refurbished and modernized skimmer through a four week training program at the plant site and furnished with an overhaul document that explicitly outlined overhaul procedures.

Concurrently, the Civil Engineer Support Office (CESO) also in Port Hueneme, Calif., was designated as program manager for the overhaul program. CESO's job included developing a refurbishment specification that would be used by CED in overhauling the units, obtaining parts and other logistics support, identifying costs for budget preparation and scheduling an overhaul program for the entire skimmer fleet through 1985.

The actual refurbishment of the first six DIP 3001 skimmers, proved ambitious. The Ford diesel engines which had been used by JBF in the original production models were no longer available. The newer units were outfitted with Detroit diesel 3-53 engines, which led to the decision to make necessary hull modifications for the installation of the 3-53 diesel engine on the original 1974 model skimmers. Necessary redesigning was completed by JBF and the first 3-53 engine was installed and tested in the summer of 1979.

Results were very favorable, with the new engine performing as expected. Moreover, standardization of the 3-53 engine on all DIP 3001 units would facilitate spare parts support and standardization of engine maintenance throughout the Navy.

The first 1974 model skimmer arrived at CED, Port Hueneme in July 1979 for overhaul and hull modifications. Trained earlier by JBF personnel on paint stripping, hull preparation, disassembly procedures and hull modifi-

cations, CED personnel attended a final intensive training program at the manufacturers to familiarize themselves with the step by step installation of the major systems including engine, belt assembly, hydraulic systems, oil transfer systems, electrical systems, oil recovery and water enhancement systems.

Although there were minor problems throughout the first CED overhaul, the previous training and the enthusiasm of the CED crews contributed to successful completion of the 'pilot' overhaul in February 1980. Final checkout and harbor tests were successful with all systems performing as expected. The total costs for completion of the first unit were well within the budget limits determined by the program manager. CED Port Hueneme will also prepare refurbished units for shipment, and supply each skimmer destined for overseas with its own spare parts package.

The crews at CED are now in process of overhauling a second DIP 3001 for overhaul. Through 1981, seven more units will undergo refurbishment as CED Port Hueneme becomes established as the Navy's oil skimmer maintenance center. □

Advice of Counsel

Government employees can be held liable

BY WILLIAM H. SPECK, Esquire

"The subject matter of the law is the regulation of the conduct of individuals living in these more or less permanent relations which we call society." Morris R. Cohen

"Government employees can be sued" (see *The Navy Civil Engineer,* Fall/Winter 1979) evoked inquiry, "Can they be held liable personally?"

Yes, government employees may be sued "in their official and individual capacities" and could be subject to judgments personally. But government employees in these respects are no different than any person: the worker or manager of a business, like the government clerk or Officer-in-Charge, is subject to suit for torts, crimes, and perhaps business transactions. Howewver, in recent memory only three NAVFAC officers or employees have been sued personally and individually, and no relief resulted.

Government officers and employees are subject to liability for torts and crimes under much the same rules as private parties, with the advantage probably in their favor. They could be subject to liabilities huge in scope commensurate with government operations, and they may be named defendants more often because the government has not allowed suits against itself or has imposed limitations on suits against itself. But they also have the advantage of special defenses, whose protection even as recently diminished remains substantial.

Federal employees most often sued have been the drivers of motor vehicles, police or doctors, who with their own hands are alleged to have wrongfully damaged others. No overall government interest was found to excuse these types from employees liability for deliberate or negligent harms; but statutes now provide for the government to defend such suits and pay liabilities.

Federal employees in non-routine operations — where they exercise discretion whether and how to act — presented different problems for courts. With the large scope of government operations, imposition of personal liability posed the "inevitable danger" of "dampening the ardor of all but the most resolute, or the most irresponsible, in the unflinching discharge of their duties." If possibly liable personally, employees might act at least in some measure to assure themselves against liability, rather than to advance the government cause.

Balancing the evil of leaving injured plaintiffs without remedy and careless employees without responsibility for their conduct, against the danger of discouraging assiduous performance of government duties from fear of retaliation, courts have such employees an absolute immunity against personal liability. Absolute immunity meant that they could not be liable while they acted within the scope of their authority. In the military the courts found no cause of action against a superior officer for negligence.

But the qualification "while acting within the scope of their authority" proved a large exception. Suppose the officer was alleged to have broken into a house and made an arrest in a raid without a warrant in violation of the 4th Amendment; or to have revoked an agriculture commodity license without notice in violation of 5th Amendment due process; or to suppress 1st Amendment free speech criticism; or to have inflicted cruel and unusual punishment violating the 8th Amendment by allowing a prisoner to die for lack of proper medical care?

The Supreme Court decided, with vigorous dissents, that an officer acted beyond his authority whenever he violated constitutional rights and had only a qualified immunity. To escape liability, if wrong, he must show that he acted "on good faith and reasonable grounds." Violation of some constitutional right is easily alleged, and good faith or reasonable grounds may require a trial for proof.

Congress itself in the environmental laws has often imposed liability on government officers. Section 118 of the Clean Air Act as amended in 1977 provides that each agency "and each officer, agent or employee thereof, shall be subject to, and comply with, all Federal, State, interstate, and local requirements . . . to the same extent as any nongovernmental entity" including procedural requirements and "any process and sanction," "notwithstanding any immunity of such agencies, officer, agents, or employees under any law or rule of law." But "no officer, agent, or employee of the United States shall be personally liable for any civil penalty for which he is not otherwise liable." Legislators, judges, and prosecutors have absolute immunity based on special factors.

To avoid suit and possible liability counsel advises caution. Stay within line of duty and within the procedures of the bureaucracy. Avoid to the extent possible actions personally against individuals or firms. Set forth the Navy or government purpose for actions taken. □

are we really prepared for

Amphibious Landings?

By CDR GEORGE J. BEDNAR, CEC, USN (Ret)
P.E., Calif.
• Port Hueneme, Calif.

If you were in Korea with the Seabees in 1950, you *may* have participated in the Seabees' *most* recent amphibious operation assault landing.

That's right — our last real beach landing was 30 years ago!

Our expeditionary operation in Lebanon in 1958 could not have been mistaken for an amphibious assault landing by even the most casual observer. The landings made at Chu Lai and Da Nang contained much of the preparation that attends an amphibious operation but the landings themselves were unopposed and so, to call them "assault landings" is to stretch the term a little.

However, the Seabees still carry the mission requirements: "To maintain a state of operational readiness to provide responsive military construction support to Naval, Marine Corps, and other forces as necessary" (NMCB); and "To assemble, install, operate, and maintain pontoon causeway piers, lighterage equipment and both bottom laid and buoyant fuel transfer systems; to provide capability to conduct both LST causeway standoff and compression moors; to provide beach salvage elements and limited construction/camp support element" (PHIBCB). These mission statements indicate that, in any future amphibious assault landing operation, the Seabees will have an active role.

During the past two years, the Navy and the Marine Corps have studied the engineer and construction force requirements for Navy/Marine Corps amphibious operations. Although the studies went into considerable depth and detail in the areas of roads, airfields, logistic support areas, ammunition storage points and combat engineer support, very little stress was placed on the construction requirements and engineer support in the beach area.

U.S. Marine Corps guidance for preparation of the beach area to receive supplies is found in a short paragraph in the Marine Corps publication FMFM 4-3 *Engineer Operations*. This paragraph is quoted verbatim:

"Landing force preparation of the beach area initially includes the breaching of minefields and obstacle barriers from the high waterline inland, to facilitate the landing and movement inland of tactical units. The follow-up preparation of the immediate beach area for unloading, dispersal, and segregation of supplies and equipment is the primary responsibility of the force landing support group (shore party). Engineer units of the landing force will be task organized into the shore party to provide the necessary support for preparation of the beach support areas."

Additional guidance is found in FMFM 4-3, *Shore Party and Helicopter Support Team Operations,* which states:

"In accomplishing its mission, Marine elements of the shore party perform tasks inland from the waters edge while those to seaward are performed by Navy elements." Some of the tasks included in the Marine Element responsibilities are:

- Marking limits of the beach onloading points.
- Locating and establishing multi-class beach dumps (storage points) and amphibious assault fuel facilities.
- Marking and removing obstacles in the beach support area (BSA).
- Constructing and maintaining beach lateral and exit roads.
- Constructing helicopter landing sites in the BSA.

The Amphibious Construction Battalion (PHIBCB) provides tactical components to the Navy element of the shore party. These components are charged with installing causeway piers and the ship-to-shore bulk fuel transfer system. They also operate lighterage for cargo transfer.

The mission of repairing damage sustained to facilities and equipment may be considered as implied in all of the mission requirements stated above. However, the workload associated with damage repairs is not calculated into the staffing requirements or equipment outfitting of the shore party. Nor are any of the engineer/construction units trained in war damage repair.

The topic of war damage repairs, especially rapid runway repair, has been and still is being studied by the Naval Facilities Engineering Command. Their primary interest, however, has been in the horizontal construction areas of airfields and other pavements. They will begin investigating some general construction areas soon but the repairs to beach support facilities are not yet scheduled for investigation.

The heavy construction equipment assigned to the shore party is minimal compared to the requirement implied in the mission statements which relate to construction and maintenance of the BSA. The following quote from U.S. Marine Corps Doctrine on Beach Preparation recognizes the gap:

"Shore Party has the primary responsibility for beach preparation. However, if the beach obstacles are extensive, the Combat Engineer Battalion provides augmentation of personnel and equipment. Beach preparation includes removal of all obstacles, construction of routes of

egress from the beach and clearing of ground for supply storage areas. When the Engineer Support Battalion comes ashore, they relieve the division engineers and further develop the beach support area."

It may be temporarily comforting to sit back and point a finger at someone else and say "That's where the responsibility lies." However, when M-day arrives and your forces are in need of supplies which have bogged down on the beach because of a lack of access or because the facilities have received battle damage and repairs are impossible, then there is no comfort in the shifting of responsibility.

What is the alternative to finger pointing and wishful thinking? The option proposed by this article is to make a deep and very detailed manpower and equipment analysis of the effort required to establish and maintain the beach support area (BSA) during the assault phase of an amphibious operation.

It doesn't really matter which armed service makes the proposed analysis. The work requirement is a shore party requirement. Work unit task assignments and sources of equipment can be designated later. The resultant product will have applicability to the Marine Corps engineer units and other Marine Corps units which must provide facilities support in the BSA. It will also have applicability to those Naval Construction Force Units which support the amphibious operations, and to all units of the Naval Beach Group.

The successful development of engineer/construction force needs in the beach support area should not be looked upon as critical of any of our previous efforts at contingency planning, but should be considered as an effort which will provide the Navy and Marine Corps with the necessary justification and factual basis for stating the support requirements of the Marine Corps amphibious operating forces in the beach area.

Once the requirements have been stated, the support commands will have a firm basis for developing the resources and for training the personnel who are to accomplish the engineer/construction force missions in the BSA. Also, the lack of war damage repair capability, which is now a serious shortcoming in the area of beach support facilities will be squarely faced and assessed. The corrective action which will be recommended will begin to provide the amphibious landing force with a capability which does not now exist. If it appears that the only solution to some of the shortages is the development of new technology areas, the time to start that lengthy process is now — not when mobilization of forces is imminent. □

Abstracts of Theses

By LT LOREN W. SMITH, CEC, USN
E.I.T., Guam

Improved public works management is addressed by Lt. Brad Fowler and Lt. Robert Michalski from two different perspectives.

Lt. Fowler examined the application of automated data processing (ADP) to the utilities management function of a public works department. He studied the current ADP support and recommended utilities support criteria for future systems.

Computer Support to Navy Public Works Departments for their Utilities Function

Key Words: Computer: ADP, Automated Data Processing; Utilities; Management

Abstract: This thesis explored the requirements for automated data processing (ADP) support to Navy Public Works Departments in their role as utility managers. Utilities functions which can benefit from ADP support are described. Results of a survey questionnaire sent to major public works departments are analyzed. Additional ADP support requirements are also indicated. Based on the survey results, alternative sources of data processing support are reviewed including: Base Engineering Support Technical (BEST) Program, Navy Regional Data ADP Center (NARDAC) support, Shipboard Non-Tactical ADP Program (SNAP) and commercial timeshare services. Recommendations are made for target public works department criteria, utilities support ADP requirements and further study of ADP support sources.

Reference: Computer Support to Navy Public Works Departments for Their Utilities Functions. Lt. Brad Fowler, CEC, USN, Naval Postgraduate School, December 1980.

Thesis: Master of Science in Management.

Lt. Robert Michalski has analyzed the effectiveness of maintenance time standards in public works management with a view toward optimizing their use in facility maintenance management.

Optimizing The Effectiveness of Maintenance Time Standards At Navy Public Works

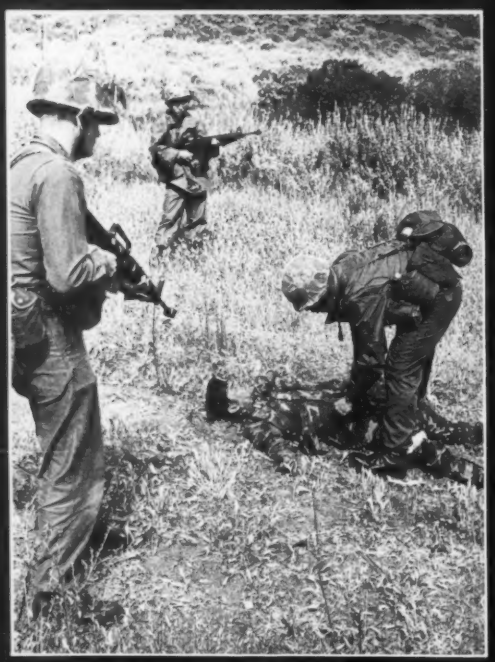
Key Words: Time Standards, Public Works, Engineered Performance Standards, EPS.

Abstract: This thesis analyzes the effectiveness of maintenance time standards in use at Navy Public Works activities with the goal of identifying strengths and weaknesses and providing recommendations for program improvement. Current available estimating methods are reviewed and compared to the Navy's Engineered Performance Standards (EPS). An evaluation of the current effectiveness of EPS in the field is made with consideration given to worker and management attitudes and acceptance. Research material was gathered from random selected activity records, management and worker surveys, statistical analysis of job orders and on site investigation of both Navy and private industry practices. The author concludes that EPS provides a reasonable reference point for performance measurement. However, ineffectiveness results when worker motivation factors are not considered in the application of maintenance time standards.

Reference: Optimizing the Effectiveness of Maintenance Time Standards at Navy Public Works, Lt. Robert Michalski, CEC, USNR-R, Farleigh Dickinson University, 1979.

Thesis: Master of Science in Management Science

military readiness!



PHOTOGRAPHS by PH2 JEFF HILTON, USN, including front and back color covers. Hilton is presently a student at the Navy Photojournalist School, Syracuse University, N.Y.

Seabee

BY LT GERALD T. FRENTZ, CEC, USN
E.I.T., Pa.
Assistant Director
Military Readiness Division
CECOS

• Port Hueneme, Calif.

Is classroom military training given officers of the Civil Engineer Corps put to practical use in a peacetime Navy?

The following exemplifies application of training provided during a recent field exercise conducted by the 31st Naval Construction Regiment.

The forces had conducted a missile attack and bombing raid on the airfield and were now massing an independent tank battalion for a sunset assault through the primary defensive lines. A quick response by runway repair crews of Naval Mobile Construction Battalion Four enabled the 3rd Marine Air Wing to launch an anti-armor strike about 5 p.m., while the aggressors were still three kilometers from NMCB 4's line of resistance. As darkness fell, air operations were suspended and the task of engaging the remaining enemy troops, who had left their damaged tanks and personnel carriers, fell directly on NMCB 4.

In the combat operations center, the battalion's staff officers were deciding how best to neutralize the incoming forces. An ensign in charge of fire support coordination began the defense by firing the battalion's 81 mm mortars, dropping high explosive and white phosphorous rounds on the foreign soldiers some 1500 meters distant.

The enemy survivors were now estimated at 300, less than half of the original force. As a large group approached NMCB 4's Bravo Company lines, the company commander (a lieutenant junior grade) ordered his M-16 rifle platoons to engage the enemy by fire and close combat. The M-60 machine gun sections were in-

Officer Training

CECOS instructors observe graduates' operational performance

structed to interlock their fire about 300 meters in front of the lines, and the company's M-203 grenadiers illuminated the battle area. The enemy troops, hidden behind a smoke screen, returned fire with machine guns, grenades, and tear gas. This time, seabees held the line of resistance and the enemy withdrew with heavy casualties.

The two officers, an ensign and a lieutenant junior grade, that were highlighted in this excerpt from the 31st Naval Construction Regiment's 24-hour mock war against NMCB 4 at Camp Pendleton, Calif., graduated with bachelor's degrees in mechanical engineering from Pennsylvania State University and the Massachusetts Institute of Technology. They are typical of the students of the Naval school, Civil Engineer Corps Officers, in Port Hueneme, Calif., and attend the Basic CEC Qualification Course after being commissioned in the corps.

The school, commanded by Captain Frederick G. Kelley, CEC, USN, offers a separate course in Construction Battalion Military Training, which these two officers, and many others, have attended. The course now is an independent six-day training period. It is primarily designed as an indoctrination for newly commissioned CEC officers and a refresher for both regular and reserve CEC officers holding billets with military troop-leading responsibilities.

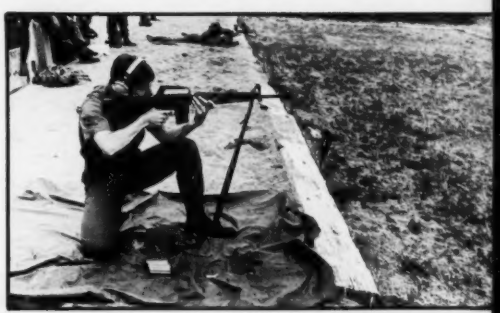
The author heads the military training instructor staff, assisted by EO1 James Melott, USN, and EA1 Eriberto Guiang, USN. Subjects taught by these instructors include rifle company organization, special and defensive weapons familiarization, troop leading procedures, Code of Conduct, handling of prisoners of war, map and compass usage, survival-escape and evasion, fire plan preparation, defensive tactics, mines and booby traps, combat maneuvers and formations, command post operation, and communications.

Additionally, the course includes two mornings of service rifle and pistol marksmanship and qualification training at the 31st NCR range, as well as a 30-hour, small-unit level, field exercise stressing convoy procedures, counter-guerrilla activities, ambush reaction principles, escape and evasion techniques, and night defense operations.

The military training is part of the continuous training offered by the 31st NCR in Port Hueneme and similar to that of the 20th NCR in Gulfport, Miss. To keep the course updated and consistent with current operational procedures, the school instructors participate with the 31st NCR in NMCB-level training and field exercises, such as described with NMCB 4 earlier. EA1 Guiang observed the battalion's functioning from their combat operations center. The author provided the battalion with simulations of enemy intelligence, air support, and artillery liaison from the 31st NCR's command post.

Coordination with the regiment and the observation of students performance after graduation in combat roles improves the quality of instruction offered by CECOS staff and consequently enhances military readiness of the Civil Engineer Corps in the Naval Construction Force. □

FIRING RANGE instructions is given by EO1 James Melott, USN, to Basic Officers Class prior to their field exercises pictured on opposite page.



THE AUTHOR demonstrates small arms fire prior to class participation. A graduate of the U.S. Naval Academy, his specialty is Seabee military readiness.

FIELD PROBLEM is studied by class members during field exercise in Santa Monica mountain range under tutelage of EA1 Eriberto Guiang, USN, naval school instructor.

Admiral Ben Moreell Memorial Dedication

Unveiling bronze bust of Admiral Moreell is Rear Admiral Combs, Mrs. Moreell, and RADM Donald G. Iselin.

Secretary of the Navy Hidalgo and Mrs. Moreell view bronze relief of Admiral Moreell. At far right, the sculptor converses with RADM Iselin. (Below) VADM Lawrence accepts the memorial for the Academy, as Chaplain Williams listens.

Admiral Ben Moreell, CEC, USN (1892-1978) has been appropriately memorialized at the U.S. Naval Academy, where he once served as Chairman of the Board of Visitors. Admiral Moreell, most noted as founder of the Navy Seabees, was Chief of the Bureau of Yards and Docks, predecessor to the Naval Facilities Engineering Command, during WWII. The memorial was presented to the academy by the Seabee Memorial Scholarship Association, whose chairman of the board is Rear Admiral Lewis B. Combs, CEC, USN (Ret) deputy to Admiral Moreell during WWII and longtime associate. The dedication address was made by Secretary of the Navy Edward Hidalgo and acceptance of the memorial by Vice Admiral W. P. Lawrence, USN, superintendent of USNA. Appropriate remarks were made by Rear Admiral Donald G. Iselin, CEC, USN and the monument's sculptor, Felix de Weldon. Invocation and benediction was delivered by Chaplain J. C. Williams, USN. Witnessing the event and honored guest was Mrs. Jessee Moreell, the admiral's widow.

NAVY CIVIL ENGINEER

Photo reports

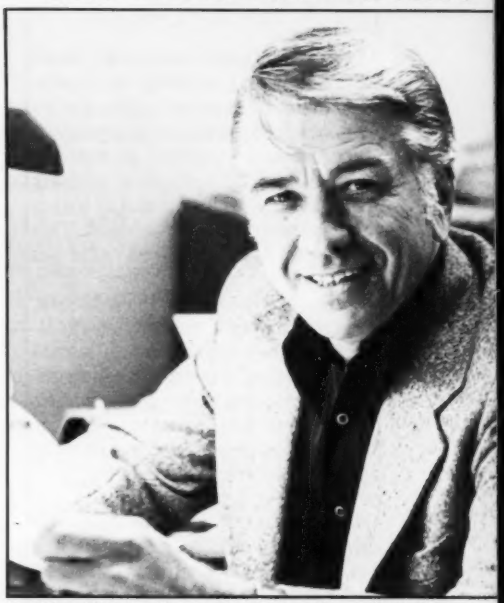
Seabee fun

AT GULFPORT CBC members of the Naval Construction Training Center stuff into a Navy sedan to support energy conservation with the "ultimate carpool" theory. When all bodies were counted the total was 16 Seabees. (Photo by PH1 Bob Blaylock)

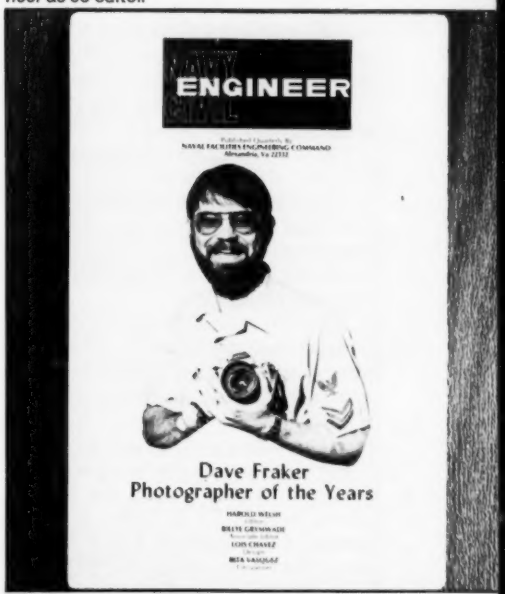
SEABEE LAYS AN EGG carefully, with a backhoe, in a Las Vegas event termed the "world's backhoe tournament." The crazy complicated event included picking up the egg,

transporting it and placing it unbroken into a skillet. Among the top scorers was Chief Equipment Operator Jerry Martin of RMCB-17, Las Vegas. The number of scrambled eggs prior to arrival in the skillet is unreported. (Photo by CDR R. R. Ballance, USNR)

The Fourth Estate



LES HELSDON, editor of *The Seabee Coverall*, CBC, Port Hueneme, has claimed the Thomas Jefferson Award, as top newspaper of all armed services, and a 'first' for the Navy. Prior to the distinction, Helsdon and the *Coverall* claimed 30 Navy Chief of Information merit awards, also a record. The prize winner, now joins *The Navy Civil Engineer* as co-editor.



DAVE FRAKER, longtime photographic contributor to the *Seabee Coverall* and Merit Award Winner, was presented a special plaque from the staff of *The Navy Civil Engineer* acknowledging his contribution to these pages through the years. Fraker has departed the uniformed Navy and become editor of *The Golden Eagle* newspaper of the Naval Air Station, Lemoore, Calif.

Ice Removal Made Easier

For large area, heavy-duty snow and ice melting applications, a mineral insulated heating cable is now available. The product, designed for embedment in concrete or asphalt, differs from other snow melting products in that it operates at higher wattage and puts out more heat. This allows for the use of less cable per installation.

Other advantages of the cable are: superior strength; exceptional moisture and chemical resistance; permanent electrical grounding; solid construction to keep out gases, vapors, flames and condensation; and the ability to operate continuously at process temperatures up to 425° F.

To achieve such performance, the cable consists of single or dual electrical conductors of predetermined resistance which are surrounded and insulated with highly compressed inorganic magnesium oxide and protected by an outer sheath of seamless copper tubing. Each specified length of heating unit comes with seven feet of nonheating mineral insulated cold lead and 12 inches of pig tail. UL-listed threaded glands allow moisture-proof attachment to junction boxes. For hazardous locations, all units are available with type G fittings.

The design engineer or contractor can plan his installation easily, since there is a selection of over 500 single and dual conductor units in precalculated lengths and wattages. Thus, any number of configurations may be created.

The cable is ideal for a wide range of industrial, institutional, and commercial applications. Typical installations include walks, drives, parking lots, bridges, roofs — any area in locations where snowfall is heavy.

For more technical information or design assistance, contact the Navy Civil Engineer, Code C20M, Naval School, Civil Engineer Corps Officers, Port Hueneme, CA 93043; Autovon 360-3104, FTS 799-3104, Commercial (805) 982-3104.

Stoking Navy Boilers With Waste Oil Products

Approximately 13% of the fuel requirements for Navy stationary boilers can be met by utilizing the waste oils routinely generated by Navy ships and naval activities. Based on FY79 figures, this represents 25 million dollars annually.

Navy waste oils are usually generated in the following manner:

- 87% — ship operations (fueling, tank cleaning, oily waste waters).
- 9% — ships, contaminated fuels, used lubricating oils, etc. *(Wherever re-refining of used lubricating oils is practical, they will not be considered as waste oils. Therefore, the actual percentage of this category may be lower.)*
- 4% — low flash point materials, solvents, used hydraulic fluids, etc., that are *no to be burned* either segregated or in blends with fuel oils.

The first two groups of waste oils have the basic qualities of regular fuel oils and, therefore, are a valuable source of energy. Utilizing waste oil in a local boiler not only reduces the fuel bill but also eliminates the associated disposal problem. Recent laboratory testing showed that the Navy waste oils could be satisfactorily fired in boilers either in blend with all grades of regular fuel oils or unblended. Essentially no modifications to the burner were necessary.

Aside from laboratory testing, demonstration tests were conducted in an operating boiler at the Naval Weapons Center (NWC), China Lake, Calif.

The waste oils generated at NWC China Lake (approximately 2,500 gallons per month) are from shops, fuel handling, and aircraft operations. Those suitable for boiler fuels consist of contaminated diesel fuel, fuel oils, JP-5, and used lubricating oils. These waste oils were first collected at their source of generation. When sufficient quantities were accumulated, they were stored in a 10,000-gallon railroad tank car. The oil was allowed to settle so that the water and solids could be separated. The water was easily drained from the tank bottom. Remaining oil was recirculated by a centrifugal pump to insure a homogeneous material.

The waste oil and No. 6 oil in the desired proportions were placed in a tank and blended. A large number of tests was conducted using different blends covering the full range of the normal operating conditions of the boiler. To compensate for any possible effects of viscosity on firing rate and spray pattern, the blends were heated such that all the oils were fired at viscosities as close to one another as possible.

During the tests (a total of 59 boiler hours), no appreciable difference in any aspect of boiler operation was experienced. Since the waste oil used was basically a mixture of high quality material as compared with No. 6 oil (lowest grade fuel oil), relatively cleaner burning was achieved with the blend. This was observed in stack gas, burner nozzle tip, and fireside boiler surfaces.

The waste oil was introduced into the fuel system near the burner nozzle through a "T" piping arrangement. The concentration of the blend was controlled by opening a needle valve. This is a convenient method, but precise control of the waste oil concentration is not possible because of fluctuations of oil temperature and pressures. Since waste oil blends of all concentrations can be satisfactorily fired, the possible concentration variations in the in-line blending scheme did not present any difficulty.

- Total boiler time — 384 hrs
- Approximate average firing rate — 110 gph
- Average steam production rate — 14,400 lb/hr (approximately 80% boiler capacity)
- Average waste oil concentration — 10% (max conc 18%)
- Total waste oil consumed — 4,000 gal

Additional information may be obtained from Dr. Tim Fu or R. S. Chapler, Civil Engineering Laboratory, Port Hueneme, CA 93043; Autovon 360-5974, FTS 799-5974, Commercial (805) 982-5974.

Naval Facilities Engineering Command
SITUATION REPORT

SHORE FACILITIES ENERGY CONSERVATION - During FY80 significant progress was made in reducing energy consumption at Navy shore facilities. The Navy achieved an 8.9% reduction in energy consumption per square foot of building area through FY80 as compared to the FY75 baseline. While still below the FY80 year end goal of 10% reduction, the trend in energy consumption was markedly downward as compared to previous years. This was brought about primarily by an increased level of energy awareness and implementation of local actions aimed at reducing energy consumption. If the present trend continues, the Navy will reach the goal of a 20% reduction in energy consumption by 1985 compared to the FY75 baseline. Energy conservation will continue to be a formidable challenge and all CEC officers are encouraged to take the lead in reducing energy consumption.

(NAVFAC Code 11)

HAZARDOUS WASTE DISPOSAL - The Chief of Naval Operations has directed the Navy Public Works Centers (PWCs) to provide hazardous waste disposal services to their customers and ships ported in their geographical service area. At the present time, PWCs at Norfolk and San Diego have disposal programs fully implemented, with the remaining PWCs at Pensacola, Great Lakes, San Francisco, Pearl Harbor and Guam scheduled to come "on-line" as additional resources become available.

(NAVFAC Code 15)

COMMAND MANAGEMENT PLAN - The NAVFAC FY81 Command Management Plan has been distributed and execution is underway throughout the Command. The CMP is serving as an important tool in the orderly implementation of the Merit Pay System for high grade personnel. In his forward letter to the CMP, Admiral Iselin states, "The CMP is consistent with the broad objectives of the SECNAV, CNO and CNM, and should be the basis for supplemental organizational objectives and personal objectives plans. Individual objectives plans that are required for members of the Senior Executive Service and high grade personnel under the Merit Pay System should be supportive of the Command goals in the CMP." Admiral Iselin has also encouraged individual objectives plans for all equivalent grade military personnel.

(NAVFAC Code 01)

Naval Facilities Engineering Command
SITUATION REPORT

THE FLEET HOSPITAL - A Fleet Hospital is a 1000 bed hospital with eight surgical operating rooms and facilities to support the 1000 patients plus 2000 staff personnel. It includes a medical core (operating rooms, X-ray, laboratory, etc.), medical support (wards, clinics, food service, etc.) and base support (staff quarters, public works, etc.). The concepts of operations were developed by the NAVFAC Medical Facilities Design Office and BUMED. CESO outfitted and assembled a prototype and with the help of west coast reserve Seabees erected it at MCAS, Twentynine Palms, Calif. All reviews and analysis have validated the design to the extent that recent Secretary of Defense programming supports 23 hospitals over the next five years. The current Fleet Hospital program is approved at $621.9 million (hardware) in FY82 through FY86.

(NAVFAC Code 06)

SEACON - NAVFAC's Ocean Construction Platform has just completed a tow from Norfolk, Va., to Diego Garcia via the Suez Canal in sixty-seven days. The 260-foot long platform with gantry crane will be used to install eleven high priority fleet moorings in the Diego Garcia harbor. The project is being accomplished by the Ocean Engineering and Construction Project office, CHESDIV, for PACDIV. CHESDIV is being assisted by PWC, San Diego, PWC, Subic Bay, CEL and UCT-TWO. The specialized moorings using propellant embedment anchors were designed and procured by CHESDIV and represent over 3000 tons of hardware. Installation of the moorings is expected to take four months.

(NAVFAC Code PC-2)

NAVY ASSESSMENT AND CONTROL OF INSTALLATION POLLUTANTS (NACIP) - OPNAVNOTE 6240 of 11 Sep 1980 put into operation the Navy program to assess past hazardous waste disposal practices at Navy shore activities. The NACIP program has four phases: identification of any contaminated sites, evaluation of the extent of the contamination, development of corrective measures, and programming of projects to monitor or control the contamination. To date, 79 activities are being considered for initial investigation under this program. Funding support for the NACIP program is available through the centrally-managed Pollution Abatement program.

(NAVFAC Code 11)

Dear Folks:

Here we are on a Pacific Island and thought you would like to hear about . . .

Three CEC couples report their day-to-day experiences on duty in the Trust Territories, Pacific Islands ➡

Our TTPI government quarters on Palau . . .

Interior home decor, less mildew . . .

inter-island sea transport at Ponape docks

Soon after World War II, the United Nations created the Trust Territory of the Pacific Islands (TTPI), composed of six island groups scattered across 3000 miles of the central Pacific called Micronesia, and to be administered by the United States.

In January 1974, the Secretary of Interior approved a $145 million 5-Year Capital Improvement Program (CIP) for basic construction in Micronesia to initiate economic, political and social development. Since then, the program has grown to $235 million including additional participation by the U.S. Environmental Protection Agency and the Federal Aviation Administration.

Facilities being constructed include airfields, roads, water systems, sewers, electrical generation and distribution facilities, and hospitals, bridges, and docks.

The TTPI CIP is being administered by the U.S. Navy's Officer-in-Charge-of-Construction (OICC) Marianas, acting as the construction agent for the High Commissioner, TTIP. Although all programming and design is done from Guam and Hawaii, OICC Marianas has assigned one ROICC to each of the five island centers of Palau, Yap, Truk, Ponape and Kosrae.

OICC's involvement in Micronesia will continue for several years, providing challenging assignments for CEC officers and their families.

The following articles are the impressions of living in Micronesia by three CEC families who have lived in the islands for over a year.

ON PALAU:

. . . coral lagoons, mildew and shopping by air . . .

By LT AND MRS. W.A. EVANS, CEC, USN
E.I.T., IND.

• Palau, TTPI

We knew ahead of time to expect some cultural shock upon arrival on Palau. Prior reading and research did not prepare us for the everyday living conditions in Koror, a town containing 8-9,000 of the total Palauan population of about 14,000.

Almost all of the roads are unpaved, coral, and pocked with potholes. Driving is like running an obstacle course and sometimes takes on the character of a cross-country endurance test for both man and machine.

We have daily water hours from 6 to 9, morning and evening. Power generation fluctuates, with short cutoffs almost daily and occasional outages for several hours. Although most cutoffs are unannounced, scheduled, rotational outages are not uncommon when repairs are required to one or more of the generators. The process of doing laundry or cooking dinner can be frustrating when both water and electricity disappear on you. Water is not potable. Many homes do not have water or electrical service.

We have enjoyed living in Trust Territory (TT) government quarters, a Samoan-style house with screens for walls and peaked roof with extended eaves. Keeping the coral dust off of furniture and floor is an impossible task! The house is not air-conditioned by choice. It has electrical appliances and government furniture. Fans keep us comfortable on most days but do not help with the tremendous mildew problem. In retrospect, we probably should have sealed off and air-conditioned at least one room to protect clothes, books, cameras and scuba gear from mildew.

Tropical flowering plants and fruit trees complete our surroundings and add a touch of privacy to our "glass-house" existence. At first it may be difficult to overlook the geckos, roaches (as long as two and one-half inches), and other creepy-crawlies, but with the passage of time, they begin to blend in with the background. Our home is located less than five minutes away from both the ROICC office and the boat dock.

The district center, Koror, is on a five square mile island flanked by Babelthaup on the north, the largest island in the T.T., and the least developed; and, to the south, by a chain of Rock Islands in a lagoon about 27 miles long. It is a small community with large, interrelated families.

The businessmen are the most pro-

gressive and stores are better stocked than elsewhere in the T.T. Australian and American frozen meats and chicken and stateside and Japanese canned goods are available, but stocks are at the mercy of ship and airline schedules. Careful buying is necessary to avoid out-dated and insect-infested items. One has to be a bit suspicious of the currentness of merchandise in a store that still has the original hula hoop for sale.

The town seems to have a store on every corner and three in between! Some comparison shopping is possible but generally prices are standard — twice as high as the continental USA. Fresh fruits and vegetables are available at two main markets and in some stores, this offers a good opportunity to sample and enjoy unfamiliar foods. A large variety and quantity of fresh fish is available almost year round but mangrove crab, lobster, crocodile and fruit bat appear less often.

There are "fair to good" restaurants in town and a dining room at the Continental Hotel (a tourist haven). Commissary and exchange privileges can be exercised with an additional air freight charge of $.25/pound (Guam to Palau).

Palau has two television stations (Japanese and American) and an AM radio station. We tune in Voice-of-America on short wave frequency. Movies are shown at the Seabee Team Camp and occasionally at the Civic Center. Several clubs offer live music and dancing every night. There are some interesting natural sights and wartime relics in Koror and on Peleliu that are worth a one-time visit.

Idle time can produce over-indulgence in food and drink or provide the precious time for hobbies, reading, gardening, cooking, baking bread, etc., that is so hard to find in the busy, demanding "civilized" world that seems far away from Palau.

Being a total landlubber in Koror can be depressing. But with a speed boat, the size of our world increases ten-fold. Once familiar with the reefs, tides and currents, the ocean becomes a wonderful, alive, and ever-changing diversion. Rock Island beaches are accessible only by boat. The Rock Islands look like mushrooms rising from the sea, capped with vegetation growing from a rocky stem. The ocean offers excellent opportunities for water skiing, fishing, snorkeling and scuba diving. Palau's waters contain more varieties of coral, sea grasses, and fishes than most areas of the Pacific and is an underwater photographer's paradise.

As the only permanent military family on a small island, life can be lonely. Family contact is maintained almost entirely by mail; Palau is served by Continental/Air Micronesia four times a week. Ship mail sometimes takes six months to arrive!

Contact with the island population is a matter of adjusting. Most Palauans speak some English, but we found it difficult to arrange for tutoring in Palauan.

Telephone service is expensive but available; connections are often difficult and of poor quality. Home telephones are rare (and rarely operational) so you find yourself holding roadside conversations with fellow motorists or making daily contacts on shopping trips. We have no local newspaper; rumor-control is a way of life!

Because of the *Protection of Resident Workers Act,* it is difficult for dependents to find employment. Even with specialized skills, the only avenue available may be volunteer work. The hospital, museum, civic center, and churches can always use willing volunteers. The $1.90/hour local minimum wage may deter one from even looking for a job and thereby loses daily contact and familiarity with Palauans. It is difficult to understand the Palauan culture, customs and politics in a year and one-half tour. This can cause some personal misunderstandings. How can anyone comprehend the subtle pleasures of chewing betelnut! Dress standards are very relaxed and it is easy to find yourself settling into a lethargic, island lifestyle. Micronesian time is always an hour or two slow!

The weather is consistently hot and humid and, with no seasonal references, one can lose track of the passage of weeks and months.

As in all moves, one must work at making new friends and relaxing in strange surroundings. It takes a little

(Continued next page)

. . . typical island roadway and backdrop.

. . . thriving shopping center, Palau . . .

. . . Congressional chambers of Micronesian Federation . . .

. . . the Dalby's at home, Ponape, TTPI . . .

. . . trademark of islands, the Micronesian smile . . .

Sokehs Rock, Ponape, landmark site . . .

extra effort to accomplish this in Palau. Of course, conditions will improve for Palauans and Navy personnel assigned here as water, power, road, airport and dock improvements are completed.

Emotionally highs and lows seem extreme. The omnipotent forces that mess with your life are unidentifiable at first and a lack of choices or variety add to the feeling of not being able to cope. Being avid divers before our arrival, getting involved with the ocean was a positive move for us and seemed to offer the least resistance. Mother Nature was easier to understand.

ON PONAPE:

Micronesian smiles and a stimulating Sakau toast . . .

By LTJG AND MRS. P.H. DALBY, CEC, USN

P.E., Guam

• Ponape, TTPI

A beautiful island in the South Pacific, Ponape is essentially round with a circumference of fifty miles and is located 1000 miles southeast of Guam, and 7° north of the equator.

Temperatures range from 70° to 90°F, but usually in the low to mid 80's. The plentiful rainfall of 200-400 inches yearly promotes the growth of tropical plants — bananas, breadfruit, papaya, pineapple, yam and taro.

Sokehs Rock, a sheer cliff in stark contrast to the lush, green trees and ground cover surrounding, is a magnificent sight as you arrive at the local airport. Air Micronesia serves the island five days a week, from either Guam or Hawaii.

As is true of some small stateside villages, none of the streets of Kolonia, the capital, are named. "Main Street" is lined with two-story wooden buildings, family stores and a post office. On dry days, street dust abounds giving the town an appearance of the frontier west.

Some Ponapeans reach Kolonia by boat only, since the roadway is incomplete.Cars and pickup trucks are available but foot power is almost as fast as motorized travel because of road conditions. The island has a variety of churches (some with English services) and now even a tennis court!

The five municipalities of Ponape are governed by both state and traditional leaders. Ponape is the capital of the Federated States of Micronesia and the state government is expanding to meet these responsibilities. The leading official is the governor; virtually no decision is made without his approval. The traditional rule consists of village chiefs (Nanamrkees) and others whose power is hereditary.

With brown skin and black hair, Ponapeans are rather hefty people. They are quiet, not very outgoing, yet friendly. People of all ages will wave, smile and greet you as you drive or offer you a ride if you are walking.

Most women have long hair, use a hair comb, and wear brightly colored print dresses between knee and ankle length. Rarely will a native woman wear pants.

Showing the thighs is a taboo, but seeing a bare-breasted woman, or one dressed in just a bra and skirt, is not an unusual occurence. Men wear long pants and shirts. Although they often are shirtless, rarely will men wear shorts. Except perhaps for a trip to town or a store, children under five or six years of age do not wear clothes. Everyone wears "flipflops" (zories) or a close variation.

Young children and the very old speak only Ponapean. The children learn English when they attend public school.

Events govern the people's lives more than anything else. A death will keep relatives occupied and together for the funeral for four days.

Although there are now two banks, few save money on the subsistance-type economy. A man will catch and sell exactly the right amount of fish if he needs a sum of money.

Houses are simple, one-room dwellings; some have power and water, most have neither convenience. Because of lack of refrigeration, food collection is a daily process. The diet consists of locally grown roots and fruits, fish and a large quantity of imported rice. No one starves on Ponape! Although the Japanese fed their armies in the Pacific with rice and food grown on Panope, no rice is grown locally today. Canned goods and frozen meat can be purchased at local stores but prices are high. Paper products are four times the U.S. price.

A household will consist of several generations — cousins, aunts, uncles, etc. When someone makes a dollar, it gets spread awfully thin. Sleeping accommodations are a simple mat on the floor and cooking is done on a fire or a single electric burner.

Ponape has several hotels (the thatched cottages of the Arthur's Village Resort Hotel are a unique experience) and some exceptionally good restaurants to serve the small number of American and Japanese tourists that visit. They usually see the ruins of Nanmadol and enroute view a gorgeous waterfall. The exact circumstances surrounding the building of Nanmadol are still a mystery.

Not at all a tourist trap, the Nett Cultural Center offers an opportunity to experience local culture: a Panapean party is simulated (a very serious and organized activity), complete with Sakau, a narcotic drink made from kava roots squeezed in hibiscus bark. SCUBA diving tours are available, and beautiful, native handcrafts are for sale.

There are even remains of a Japanese hangar, rice mill and water system, but the most inviting aspect of Ponape by far is just the simple peace and quiet of a South Pacific island.

Located several miles from town, this tranquility surrounds our home (we are the only military personnel on the island). The wooden, two-bedroom Trust Territory house resembles a small, rural farmhouse. The large lawn area provides growing space for all our vegetables. It requires work, as all gardens do, but the corn, tomatoes, beans, etc., make the effort worthwhile.

Deep sea trolling provides additional entertainment. On Saturdays, look for us twenty miles off the coast where we catch a wide variety of fish. Being active in a local church also keeps us occupied. And, we go to Guam every six months.

Like any duty station, Ponape is what you make of it. For us, it has been a welcome change of pace and we have thoroughly enjoyed it. □

ON TRUK:

. . . tennis anyone?

Bring your own net!

By LT AND MRS. O.E. BARFIELD, CEC, USN

• Truk, TTPI

Truk Lagoon . . . warm, easy going, plus beautiful sunsets. Truk is a perfect spot for those seeking a change from the busy hectic life in the States. The pace is slow and the people interesting.

Only 8° north of the equator, Truk has a warm and humid climate with daily showers during the rainy season. The temperature remains constant both day and night. Since typhoons generally originate near our area, they are not strong locally but gain intensity as they leave the area.

Navy personnel usually live in Trust Territory Government quarters or rented houses. A stove, refrigerator, washer, dryer, and furniture is included as well as air-conditioning. We did not have television on the island but it was expected to arrive within a few months.

The island does have one tennis court. You need to bring your own net, however, because the Trukese find them excellent fishing nets!

Life is so informal here that the occasion seldom arises when you need formal china and crystal; everyday dishes are quite adequate. Stores are not well stocked and very expensive so it is necessary to import most of your needs. Casual wear is the uniform-of-the-day. A few long

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. . . street scene reminiscent of Western movie set . . .

. . . junior Micronesians on lagoon front . . .

. . . government agriculture station on Ponape

. . . Truk cinema

and Truk church

dresses or slacks will suffice for special occasions. Trukese women do not wear shorts or pants so sun dresses are ideal. Men wear just about anything.

A sewing machine is a handy piece of equipment. During rainy season, rain gear is essential and the mud makes good shoes impossible to wear. I wear zorries everywhere, even in the evenings. In over a year, my husband has worn a suit just once!

Because the roads are not paved outside the main commercial center and no unleaded gas is available, a jeep or four-wheel-drive vehicle is excellent. A contemporary car will be destroyed by the seawater and dust. Most Trukese drive small pickup trucks.

Shopping conditions have improved during the past year. The stores have better merchandise and have imported more American products. However, selection is still limited compared with home standards. We buy almost all our food from Guam and have it flown in on Air Micronesia. During certain seasons, fresh vegetables (cucumber, green beans, onions) and fruit (papaya, banana, coconuts), are available.

There are both Catholic and Protestant churches on the island. Some services are in English.

Our hospital is inadequate. A good first-aid kit, with all personal medication and medical supplies, is essential. A Navy Corpsman, stationed on another island with a Civic Action Team, can provide assistance if necessary.

Schools are not up to American standards by any means; the religious schools are somewhat better academically. However, the opportunity to live on Truk and experience the Micronesian culture is an education in itself.

While stationed on Truk, we were able to take an R&R (Rest and Recreation) to Australia, New Zealand and Hawaii. Upon our departure from Truk, we traveled to the Philippine Islands, Bangkok and Singapore. There were also available to us many inter-island trips by air and sea.

Few jobs are available for dependents. Truk is trying to replace its American teachers with Trukese. The local stores hire their relatives. However, after several months of continued effort, I landed a job as a secretary at Public Works. Then I was able to transfer to a guidance and counseling position and I am now the State Testing and Evaluation Coordinator. So finding employment is not impossible, just very difficult.

If you like to scuba dive, then Truk Lagoon is for you. Within the lagoon lie many Japanese ships sunk during World War II in Operation Hailstone. Every weekend we explore the reefs and wrecks; we still haven't seen them all! Fishing is terrific and even the snorkeling is fantastic.

Perhaps one of the greatest advantages of this tour is the social contact with the varied personnel involved in the project. As prominent community members, we are included in many island activities. We have hosted several dignitaries including ambassadors, governors, and admirals. There are many other Americans on the island (teachers, government workers, Peace Corps volunteers, etc). If you enjoy socializing, there is always the opportunity. We particularly enjoy meeting and visiting with our Trukese friends and learning about their culture.

Truk is not completely a tropical paradise. There are many things we've had to go without and adjustment might have been difficult if we had expected American standards. But the easy going lifestyle is great, the Trukese friendly, and the experience memorable. □

island air terminal and OICC office

Visual inspections aren't enough!

By DAVID I. WILLIAMS
Maintenance Division
Headquarters Naval Facilities Engineering Command

• Alexandria, Va.

A new program is underway that will improve the Navy's ability to assess facility conditions. In the past the Navy has relied on the inspection program executed at the shore activity level.

For certain structures, the traditional visual controlled inspection is not enough to thoroughly evaluate the facility. When the facility is underwater, underground or of highly specialized nature, visual inspections are not adequate and the results obtained can be misleading.

For example, a visual inspection of a pier could show a deck in excellent condition and no major problems above the waterline. The inspector would rate the pier in excellent condition and recommend no work be programmed. An underwater inspection could show the pier in imminent danger of collapse.

Sometimes a visual inspection does not provide enough information to make the right repair choice. For example, the roof on Building 100 leaks. Should it be replaced or repaired? This decision should be based on the extent of deterioration and moisture in the roof which is difficult to verify without specialized equipment such as a moisture meter. Occasionally roofs are replaced when a simple repair could suffice if sufficient information was available on which to base a decision. To correct these problems a specialized inspection program is being developed. This program concentrates on inspections where a specialized skill or equipment is required, that is, not generally available at a public works department or center.

Inspections will be provided centrally from the Naval Facilities Engineering Command under control of Maintenance Division. Current funding levels are low and therefore full inspection is not possible. For the next several years inspections will be provided on a priority basis and directed towards roofing, waterfront facilities and underground utilities. Eventually the program will be expanded to cover airfield pavements and certain other specialized areas as adequate inspection devices are developed.

The Naval Civil Engineering Laboratory is currently studying problem areas to determine what equipment exists from commercial sources and to determine what equipment may need to be developed. As equipment is tested and approved, it will be added to the overall inspection program.

The intent of the program is to provide shore activities information to better plan their maintenance execution control of repair dollars and to provide information for backlog identification and facility condition. This is not an audit program to measure the effectiveness of shore activity inspection but rather a recognition of the fact that certain inspections are beyond the capability of most shore activities. This program should be recognized as an expansion of the PWD/PWC inspection staff. In some cases the normal controlled inspection should be integrated with the specialized inspection. In case of waterfront inspections only underwater inspections will be provided centrally. The above water inspection is required to provide a total condition evaluation. The program will be developed over the next five years. As procedures are developed they will be published.

Controlled inspection procedures already published in appropriate manuals will be revised to reflect the results of specialized inspection and to assist in the integration of the two inspections.

Since specialized inspections are thorough and expensive, they will be generally accomplished during a three to five year frequency. Normal controlled inspections will be scheduled as previously recommended.

Primary emphasis has been directed to the first phase of a waterfront baseline study which will develop inventory data as well as provide a visual underwater inspection. This portion of the program will be executed by the Ocean Engineering Project Office located at Chesapeake Division, Naval Facilities Engineering Command. Inspections will be performed by contract or Navy diving teams as available.

The second item to be emphasized is roofing. The damage from roofing failures and leakage is one of the Navy's biggest and most costly problems. The numerous problems at shore activities require that higher attention be given to roofing in an attempt to extend the life of these systems. Initial attention will be given to built-up roofing. These inspections will be executed through the six Engineering Field Divisions by either in-house capability or contract. Six nuclear moisture meters have been procured for these inspections.

Since the total square footage of

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visual inspections

(Continued from preceding page)

built-up roofing is large (400 million) and inspection resource levels are low, only a small percentage of the roofs will be inspected. Priority attention will be given to roofs with suspected or known problems to better define the repair solution.

Shore activities may expect some inquiries for information to support this program. Plant account records do not always display information in the manner required to plan specialized inspections. For example, utility lines come in many diameters. Different techniques are available for various sizes.

The Specialized Inspection program can be a valuable tool for the facilities manager. The data collected along with repair analysis techniques that are also being developed should greatly assist in facilities deficiency identifications and correction. □

A new approach to the perennial problem . .

MANPOWER REQUIREMENTS

. . . called SHORSTAMPS

BY LCDR C. RAY ALLSHOUSE, CEC, USN,
Manpower Planning Analyst, (AICP; RA, PA)

• Norfolk, Va.

Contemporary duty in a public works organization carries the awesome weight of manpower authorization problems in probably every case. The problem of an aging facility and equipment inventory compounded by a dwindling manpower resource to perform the job is painfully typical.

So erupts the public works officer's dilemma: An increasing workload complemented by a decreasing effective work force. If that were not bad enough, the relatively large size of a typical public works department in comparison with the total activity manpower resource makes them extremely vulnerable to a modern day form of piracy, when it comes to personnel cuts.

If and when will it all end, one asks? Maybe sooner than you think! The Navy Shore Establishment has been launched into a new arena of manpower planning — SHORSTAMPS — Shore Requirements, Standards and Manpower Planning System.

The traditional approach exercised by the Navy in planning for future strengths ashore, has been largely disjointed, piecemeal, and oftentimes suspiciously supported. As weak as it might have been, there was nothing better. Furthermore, higher echelons of command were ill-equipped to question requests generated by field activities in any other than a generalized sense. Spurred by Congressional criticism, the Navy developed an explicit system to replace historic procedures. The system, (SHORSTAMPS), was approved in 1973 by Congress as the only acceptable means for the justification of Naval Shore Establishment Manpower Requirements. The problem, however, has been the system implementation schedule. Early predictions of milestones were grossly underestimated. A continued failure to meet revised

the author unravels and defines many new acronyms dealing with public works staffing

scheduling promises, prompted Congress to issue a stern warning to the Chief of Naval Operations this past year. Roadblocks to system implementation have been identified, and a positive effort has been initiated to correct these problems.

The principal difficulty surrounds the submission of data from the field which is collected by and from each individual Unit Identification Code (UIC). It is extremely important that submitted data be as accurate as reasonably possible since the cumulative totals are simply no more than the sum of the individual parts. It is expected that SHORSTAMPS derived manpower requirements will be viewed with minimal criticism when submitted for review in the POM process of the Planning, Programming, and Budgeting System (PPBS). Staffing standards identify quality (designator/rate/series/paygrade/etc.) as well as quantity of manpower.

Since this system ties manpower authorizations directly to tasking, problems at the activity level caused by staffing shortages can readily be translated into quantifiable tasking and mission degradation. Consequently, this will remove the need for the emotional outcries of the past associated with ceiling cuts. Major claimants will have the opportunity and responsibility to make manpower allocations determinations based on changes in mission tasking. Conversely, activity COs and OICs will be in a much better position to propose quantifiable tasking alternatives to resolve manpower authorization problems. SHORSTAMPS standards are being implemented on a piecemeal basis due to the volume of the total effort required. In general, it is reasonable to anticipate that those manpower authorizations covered by staffing standards will be "fenced" or protected.

It is also important to note that SHORSTAMPS represents a portion of the Total Force Management Program. Total Force Manpower Management includes fleet as well as shore units and combines officer, enlisted and civilian billets/positions as well as equivalent manpower effort accomplished by contract.

SHORSTAMPS standards are developed along functional rather than organizational lines. The entire mission of the Shore Establishment is divided into mission areas (currently 26), which are further divided into functional areas. The smallest unit for which work center standards are actually generated is the Required Functional Capability (RFC). Each RFC is coded alphanumerically in the following format: XXX00.000, where the three letters represent the mission area; the two digits preceding the decimal point represent the functional area; and the final three digits represent the specific RFC identified.

For example, the preparation of contract plans and specifications by your Engineering Branch is coded FAC02.002, which translates to the mission area of Facilities Support (FAC), the functional area of Provide Engineering Support (02) and finally the preparation of contract documents (RFC.002).

All RFCs performed by an activity should be included in Shore Required Operational Report (SHOROC) reporting. When and where staffing standards exist, workload factors (tasking parameters) should also be reported. Billet/position authorization documents include a specific Billet Occupation Code (BOC) for each billet or position. The BOC serves as the only link between the SHOROC data base and the Navy's three authorization files (Officer, Enlisted and Civilian Personnel). Each RFC has its own BOC. The assignment of an improper BOC to a billet/position results in an erroneous authorization read-out for a given RFC.

The mission areas that apply directly to public works functions include Facilities Support (FAC), Shore Facilities Planning (SFP), and Shore Facilities Acquisition (SFA). When applying BOCs to authorizations in these mission areas, it is important to include all support personnel whose efforts are entirely dedicated to these mission areas as part of the same. For example, a GS-312-4, clerk-steno assigned to the engineer branch should be coded as RFC FAC02.000 (functional area support services for FAC02-Engineering Support: BOC-2F) rather than as RFC ICS 08.001 (provide clerical and office services: BOC-JM). This is a common error in reporting.

In cases where an authorization is supporting more than one RFC, assign the appropriate BOC for the primary responsibility or function for which a majority of productive time is associated (only one BOC may be assigned to any one billet/position).

This synopsis of the system is presented to provide an overview of SHORSTAMPS in terms of applicability and importance. The following actions will help your command or activity serve its own best interests in making the system do its job:

- Check to see that mission tasking is completely reported on your activity Shore Required Operational Capability Report (SHOROC Report No. 1).
- Make sure that SHOROC workload parameters in facilities related mission areas are accurate and up-to-date (also shown on SHOROC Report No. 1).
- Check to see that Billet Occupational Codes entered on Officer and Enlisted Manpower Authorizations as well as the Civilian Personnel File, are accurate in accordance with the SHOROC Dictionary, (OPNAVINST 5310.12D).

Your efforts in almost every case will not produce results for your activity during your current tour. This is a methodical planning system and is similar to Shore Facilities MCON programming, in that the fruits of your efforts will be realized by your relief. □

The New Commander and Chief of Civil Engineers

Rear Admiral William Zobel

• Alexandria, Va.

Rear Admiral William Marshall Zobel, CEC, USN, became the 32nd Commander of the Naval Facilities Engineering Command and Chief of Civil Engineers of the Navy when he assumed command on January 15. Rear Admiral Zobel was formerly the Vice Commander, Naval Facilities Engineering Command, and Deputy Chief of Civil Engineers, having reported to that position on December 1, 1978.

Zobel was born July 20, 1929 in Charleston, S.C., the son of Captain W. A. Zobel, CEC, USN (Ret) and Ruth (Marshall) Zobel. He attended the Citadel, in Charleston, for two years before accepting an appointment to the U.S. Naval Academy. He graduated from Annapolis with the Class of '52 and was commissioned Ensign on 6 June 1952.

He spent two years as fire control division officer aboard the USS *Worcester* cruising the Mediterranean and Caribbean Seas.

He then entered Rensselaer Polytechnic Institute, Troy, N.Y., in March 1954 and graduated in September 1955 with a Bachelor of Science degree in Civil Engineering.

After various assignments, including service with Naval Construction Battalion 5, he was accepted for postgraduate training and became a student at the Naval Postgraduate School, Monterey, Calif., where he earned a Master of Science degree in physics in May 1963, specializing in nuclear engineering.

Assigned as Officer-in-Charge, Naval Nuclear Power Unit, Fort Belvoir, Va., he was responsible for field aspects of the Navy's shore-based nuclear power program. He supervised the overall operation and administration of the first Navy-operated nuclear power plant in the Antarctic, and Deepfreeze operations in 1963 and 1964.

In June 1970, he was Chief of Staff, 3rd Naval Construction Brigade, in Saigon, RVN.

He took command of the 32nd Naval Construction Regiment in December 1970, and held that post until May 1971.

From June 1971 through July 1973, Rear Admiral Zobel served as Commanding Officer of the Construction Battalion Center in Gulfport, Miss., and Commander of the 20th Naval Construction Regiment.

Between July 1975 and July 1977, he served as Commanding Officer of the Navy Public Works Center, Norfolk, Virginia; and in August 1977, he was assigned as Director, Construction Operation and Facilities Management, Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics).

RADM Zobel is married to the former Mary Keller Counts of Charleston and Columbia, S.C. They have three sons — Lieutenant William Counts Zobel, USN; David Marshall Zobel; and James Walter Zobel. He holds memberships in Tau Beta Pi, Chi Epsilon and Sigma Xi, and national honorary engineering and scientific societies.

He has received the Defense Superior Service Medal, the Legion of Merit with Combat V, the Meritorious Service Medal, and the Meritorious Unit Commendation. □

Admiral Iselin retires from active Naval Service

concludes career as Commander, NAVFAC and Chief of Civil Engineers

Rear Admiral D. G. Iselin

• Alexandria, Va.

Rear Admiral Donald G. Iselin, CEC, USN, Chief of Civil Engineers, and Commander, Naval Facilities Engineering Command, has retired from active duty following 38 years of naval service.

He was relieved by the present Vice Commander and Deputy Chief of Civil Engineers, Rear Admiral William Marshall Zobel. Change of command ceremonies were held at the Pension Building, Washington, D.C., on January 15.

Iselin was born in Racine, Wis., September 5, 1922, attended Marquette University for two years as a member of the NROTC, and was later graduated from the U.S. Naval Academy at the head of his 1945 class. For the next year he served on the light cruiser, USS *Providence,* flagship of the Mediterranean squadron. In 1946 he was selected for the Civil Engineer Corps of the Navy and received his bachelor and master degrees in civil engineering at Rensselaer Polytechnic Institute.

He served with the 104th Naval Construction Battalion in Alaska and Hawaii, and later was technical advisor for Navy construction projects during the atom bomb tests at Eniwetok in 1950-51.

Iselin was later selected by Admiral Rickover to be the site project officer for the design and construction of Shippingport Atomic Power Station near Pittsburgh, Pa., the nation's first large scale nuclear power plant for producing electricity.

RADM Iselin served as Executive Officer and Assistant Director of the Naval Civil Engineering Laboratory at Port Hueneme, California, from 1958 to 1961.

For his work in directing and managing the installation of the water desalination plant in Guantanamo Bay, Cuba, when Fidel Castro terminated the Navy's water service in 1964, RADM Iselin was awarded the Navy Commendation Medal.

From February to August 1967, RADM Iselin was assigned as Special Assistant to the Officer in Charge of Construction, Republic of Vietnam. During this period he developed a new system for construction management under hostile conditions, referred to as "Level of Effort." For this innovative method he was awarded the Legion of Merit and the Stephen Decatur Award of the Navy League of the United States. Later, for his management of contractor-accomplished military construction in Vietnam, he was awarded a second Legion of Merit.

During 1968-69, RADM Iselin was Commander of the Atlantic Fleet Seabees, based at Davisville, R.I., and was awarded the Meritorious Service Medal for his command performance.

RADM Iselin was next assigned to the Naval Facilities Engineering Command as the Deputy Commander for Planning and was awarded a third Legion of Merit for his direction of the Command Advisory Board in developing NAVFAC management innovations.

Later, RADM Iselin commanded the Pacific Division, Naval Facilities Engineering Command, and the Naval Construction Battalions, U.S. Pacific Fleet. He earned a fourth Legion of Merit for his response to Fleet and Force requirements, and for supervising the conclusion of the $1.8 billion Cost-Plus-Award-Fee construction contract in Vietnam.

RADM Iselin reported in 1973 as the Vice Commander, Naval Facilities Engineering Command, Washington, D.C., and Deputy Chief of Civil Engineers. On 27 May 1977, he assumed the duties as Commander, Naval Facilities Engineering Command, and Chief of Civil Engineers.

He is a registered professional engineer in the District of Columbia; a member of Sigma Xi; a member of the National Society of Professional Engineers; a member of the American Society of Civil Engineers; and a member of the American Public Works Association. He is also Past President of the Society of American Military Engineers; a Commissioner of the American Section, Permanent International Association of Navigation Congresses; an Honorary Member of the American Institute of Architects, and a member of the National Academy of Engineering.

RADM Iselin is married to the former Jacqueline Myers. They have three children, Donna Iselin Broom, Michael and Madeline.

His future plans have not been announced. □

Upon the occasion of my retirement from the United States Navy, I would like to take this opportunity to express my sincere appreciation to the entire staff of the Naval Facilities Engineering Command, the Civil Engineer Corps and the Naval Construction Force, for their years of dedication and loyalty.

Throughout my career I have been privileged to work for and with capable, professional and reliable individuals, both military and civilian, who were always willing and able to go that extra mile to get the job done. It has been that attitude that has given our organization its well earned reputation for success.

It has been a pleasure to have served with you.

D. G. Iselin

D. G. Iselin
Commander, Naval Facilities
Engineering Command and Chief
of Civil Engineers

A farewell from 'Topside'

final remarks to readers of The Navy Civil Engineer magazine

• Alexandria, Va.

You would probably be surprised to know how much of my time is spent in acknowledging compliments, responding to letters of appreciation and listening to praise from our "customers." The NAVFAC organization has rightfully earned and consistently maintained an excellent reputation for responsiveness within and outside of the Navy/DOD organization. We are known by the customers we serve directly, and those we support indirectly, as an outfit that produces a high quality product. You never get tired of hearing how good your people are.

That praise and that performance are even more commendable when you consider that it occurred in times of "do more with less." How do we maintain our fine reputation, produce high technology products, manage to put out the "spot fires," and accomplish high priority short-fuse projects in this belt-tightening era?

First, let's consider what "doing more with less" means for our organization. It means we are charged with additional responsibilities. Taking on these additional responsibilitites is complicated by the fact that we are authorized a smaller staff with which to accomplish this workload. We have fewer dollars to spend on that ever-increasing "laundry list" of projects. Finally, everyone has to stretch resources, increase efficiency and effectiveness, and just plain work harder to meet daily requirements.

Under these less than ideal circumstances one might expect an organization to lose some of its edge and let a few projects and programs fall through the cracks. It would be feasible to assume that an organization might produce a lower quality product than in times of greater resources or complete a lower percentage of its required workload. The organization might miss critical deadlines, refuse additional responsibilities or be stretched so tight that it would lose flexibility and be unable to "put out spot fires."

I'm proud to report that NAVFAC does not suffer from a single one of these symptoms. Even though we have a multitude of complex and technologically sophisticated endeavors going on throughout our worldwide NAVFAC organization, we have been successful in keeping our finger on the pulse of the action. Moreover, we have been able to galvanize our forces whenever the call comes, and concentrate on high priority items when "hot spots" develop; without losing our momentum or solving front burner items at the expense of our day-to-day programs.

Oh, we have our problems from time to time. And we miss an important deadline now and then. And on rare occasions we really blow one! But in each case we rally round, pick up the pieces, correct and complete the work, and try to benefit from the lessons learned.

How do we maintain this first rate record? What is the key to our success? Our reputation is built on a firm foundation of performance . . . solid consistent performance by all hands on a day-to-day basis. Our success stems from a basically sound and technologically competent workforce who keep their skills sharp and up to date. It rides on the shoulders of people who are willing to put forth whatever is required on a daily basis and more when the call comes. It belongs to a staff that is always ready to assume increasing volumes of responsibility.

Our success hinges on close and consistent attention to the overall goals and objectives set down in our annual Command Management Plan. It is adhered to by senior management who allow us to digest and effectively respond to high interest items without jeopardizing our day-to-day business. It is followed by middle managers who develop their own plans of action and milestones to achieve the commandwide goals and objectives set by senior management personnel. And it is supported by first line supervisors whose daily efforts are geared toward achieving those milestones, goals and objectives.

This commonality of direction, this dependable, reliable and steadfast drive toward a common direction and a common set of objectives gives our organization the stability and flexibility to rise to the occasion, to put out the fires, and to maintain the excellent reputation for responsiveness known to all we serve.

Thank you for your personal contribution toward our team effort and congratulations for a job well done.

Engineering students, who qualify, have opportunity to join the Civil Engineer Corps, too!

The U.S. Navy offers an exceptional opportunity to join the young professionals pictured. Currently qualified applicants may earn over $830 a month while completing the final year at accredited engineering colleges! Upon graduation the student may be commissioned an Ensign, Civil Engineer Corps, and pursue an immediate career in engineering far in advance of civilian contemporaries. For complete details contact your nearest Officer Programs Officer of the U.S. Navy Recruiting Command.

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to Philadelphia

ENS CARLO D. MONTEMAGNO
BSE/Cornell
to Keflavik, Iceland

ENS CHRISTINIA A. MOOT
BSCE/New York State
to San Juan, P.R.

ENS RODNEY D. MORTENSON
BSME/Auburn U.
to Gulfport, Miss.

ENS ZANE A. MYERS
BSAE/Cal Poly
to Subic Bay, R.P.

ENS ROBERT F. PARKER
BSCE/U. of Washington
to Vallejo, Calif.

ENS MICHAEL A. PEEK
BSIE/Texas A&M
to Diego Garcia, I.O.

• LTJG GARY A. PFANNENSTIEL
BSME/U. of Kansas
to Long Beach, Calif.

ENS MICHAEL N. RIEGER
BE/Stevens Inst.
to Gulfport, Miss.

ENS FARON W. SMITH
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to Charleston, S.C.

LTJG MICHAEL S. TRUEBLOOD
BSME/USNA
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• ENS JAMES M. UNDERWOOD
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Jacksonville, Fla.

• LTJG A. P. VERHOFSTADT
BSMC/USNA
to Key West, Fla.

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ENS KENT R. WESTOVER
BSCE/Chico State
to Corpus Christi, Tex.

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to Gulfport, Miss.

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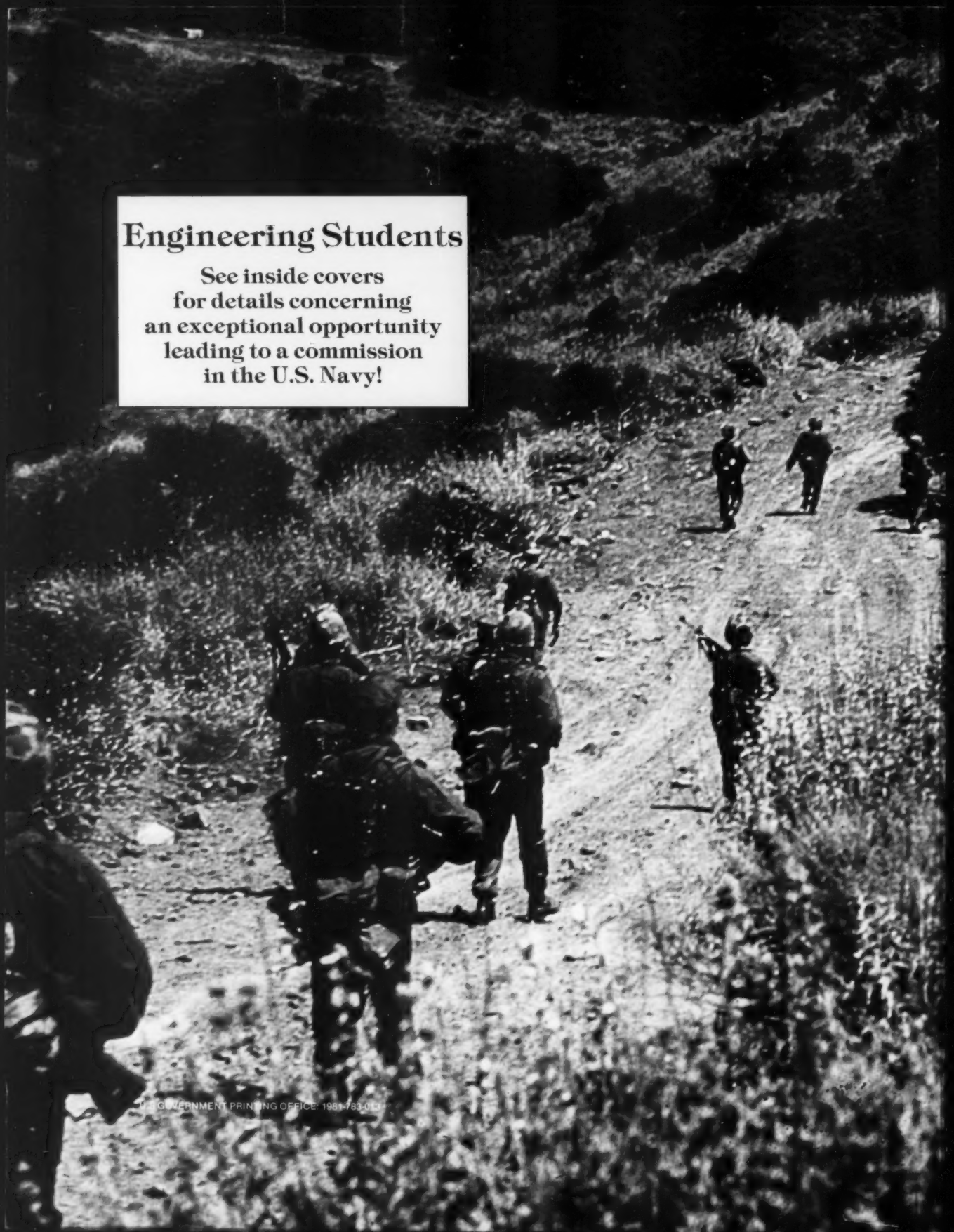
CIVIL ENGINEER CORPS
UNITED STATES NAVY

Continued From Inside Front Cover


Engineering Students
See inside covers
for details concerning
an exceptional opportunity
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